

Natality

An Overview: 2004

Total Resident Live Births	11,339
Crude Birth Rate per 1,000 Population	15.0
Median Live Birth Weight (Grams)	3,374
Low Weight Births (Less than 2,500 grams)	787
Low Birth Weight Rate per 1,000 Live Births	69.4
Mean Age of Mother	27
No Prenatal Care (Percentage of Total Single Live Births)	0.9

For the first time in 2003, the Department of Health, Office of Data, Statistics, and Vital Records utilized multiple races on the birth certificate. Please see page 218 in the Technical Notes for a more indepth explanation. There were 11,339 births to South Dakota residents in 2004, for a crude birth rate of 15.0 per 1,000 South Dakota resident populations.

Resident births increased by 2.9 percent from 2003 when there were 11,022 births. In 2004, 51.4 percent of the babies born were male and 48.6 percent were female. Racially, white births were 51.7 percent male and 48.3 percent female; American Indian births were 50.1 percent male, 49.9 percent female.

The low birth weight rate per 1,000 live births increased from 66.6 in 2003 to 69.4 in 2004. This was a 4.2 percent increase from the 2003 low birth weight rate.

Table 4, below and Figure 2, page 12, display the live births and crude birth rates for the United States and South Dakota for the past 20 years. As the illustrations indicate, South Dakota's birth rate remains above the national average.

Table 4
Resident Live Births and Crude Birth Rates, South Dakota and United States, 1985-2004

Year	United States		South Dakota	
	Number	Crude Rate	Number	Crude Rate
2004	*4,121,000	*14.0	11,339	15.0
2003	4,089,950	14.1	11,022	14.6
2002	4,021,726	13.9	10,698	14.2
2001	4,025,933	14.5	10,475	13.8
2000	4,058,814	14.7	10,346	13.7
1999	3,959,417	14.5	10,516	15.1
1998	3,941,553	14.6	10,281	14.8
1997	3,880,894	14.5	10,168	14.6
1996	3,891,494	14.7	10,469	15.0
1995	3,899,589	14.8	10,470	15.0
1994	3,952,767	15.2	10,504	15.1
1993	4,000,240	15.5	10,718	15.4
1992	4,065,014	15.9	11,007	15.8
1991	4,110,907	16.3	10,930	15.7
1990	4,158,212	16.7	10,987	15.8
1989	4,040,958	16.4	11,072	15.5
1988	3,909,510	16.0	11,185	15.7
1987	3,809,394	15.7	11,482	16.2
1986	3,756,547	15.6	11,623	16.4
1985	3,760,561	15.8	12,129	17.2

Note: *U.S. data are provisional.

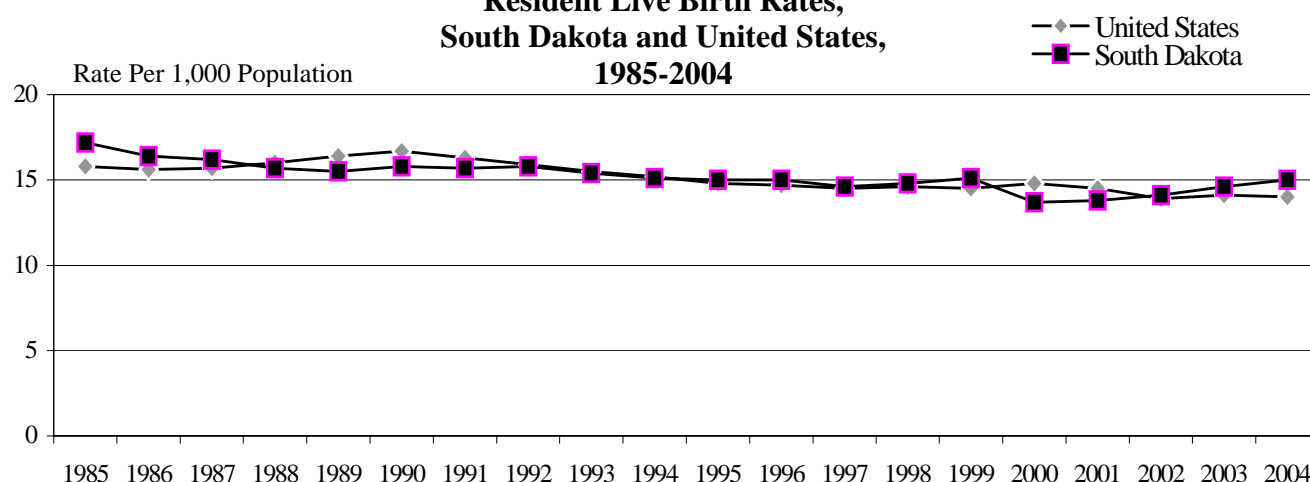
The decrease in the crude rate in 2000 is due to the change in population from the 2000 census.

Crude birth rates are per 1,000 population.

Source: National Center for Health Statistics

South Dakota Department of Health, Office of Data, Statistics, and Vital Records

Figure 2
Resident Live Birth Rates,
South Dakota and United States,
1985-2004



Source: South Dakota Department of Health, Office of Data, Statistics, and Vital Records

Table 5
South Dakota Resident Live Births by Mother's Race,
1985-2004

Physicians attended 92.7 percent of South Dakota resident births in 2004, while certified nurse midwives attended 6.5 percent of the births. In 2003, South Dakota physicians and midwives attended 92.5 percent and 6.6 percent of the births respectively. In 2004, home births represented 0.4 percent of South Dakota resident live births. This rate remains unchanged from 2003.

Births by Race

Table 5 shows the number and percent of resident births by mother's race since 1985. In 2004, the percentage of births to whites increased by 0.4 percent, while the percentage of births for American Indians decreased by 2.6 percent. The percentage of births to other races increased 7.7 percent.

Births		White		American Indian		Other	
Year	Number	Number	% of all Births	Number	% of all Births	Number	% of all Births
2004	11,339	8,924	78.7	2,100	18.5	313	2.8
2003	11,022	8,642	78.4	2,091	19.0	289	2.6
2002	10,698	8,648	80.8	1,805	16.9	244	2.3
2001	10,475	8,469	80.8	1,770	17.0	233	2.2
2000	10,346	8,416	81.3	1,682	16.3	245	2.4
1999	10,516	8,658	82.3	1,665	15.8	192	1.8
1998	10,281	8,383	81.5	1,716	16.7	181	1.8
1997	10,168	8,412	82.7	1,538	15.1	218	2.1
1996	10,469	8,655	82.7	1,632	15.6	181	1.7
1995	10,470	8,684	82.9	1,564	14.9	221	2.1
1994	10,504	8,771	83.5	1,533	14.6	197	1.9
1993	10,718	8,822	82.3	1,720	16.0	173	1.6
1992	11,007	9,090	82.6	1,739	15.8	159	1.4
1991	10,930	9,068	83.0	1,665	15.2	132	1.2
1990	10,987	9,165	83.4	1,668	15.2	154	1.4
1989	11,072	9,163	82.8	1,753	15.8	156	1.4
1988	11,185	9,343	83.5	1,696	15.2	146	1.3
1987	11,482	9,642	84.0	1,695	14.7	145	1.3
1986	11,623	9,807	84.4	1,678	14.4	138	1.2
1985	12,129	10,301	84.9	1,689	13.9	139	1.2

Note: Failure of the races to add to the total is due to unknown races contained in the total birth column.

Source: South Dakota Department of Health, Office of Data, Statistics, and Vital Records

Table 6
South Dakota Resident Live Births by State in
Which Birth Occurred and Mother's Race, 2004

	Total	RACE OF MOTHER		
		White	American Indian	Other
Total	11,339	8,924	2,100	313
Colorado	4	3	*	*
Iowa	132	123	4	5
Minnesota	59	56	3	*
Montana	4	4	*	*
North Dakota	136	68	68	*
Nebraska	60	20	40	*
South Dakota	10,927	8,639	1,981	305
All other	17	11	3	3

Note: *Cells with less than 3 events.

Failure of the races to add to the total is due to unknown races contained in the total birth column.

Source: South Dakota Department of Health, Office of Data, Statistics, and Vital Records

South Dakota Resident and Occurrence Births

Table 6 shows that of the 11,339 South Dakota resident births in 2004, 8,924 were to white women while 2,100 were to American Indian women. Of the 11,339 births, 412 occurred out of state. The four states where the majority of these births occurred are bordering states. The percent of births occurring in each are as follows:

- Iowa-1.2 Percent
- Minnesota-0.5 percent
- Nebraska-0.5 percent
- North Dakota-1.2 percent

In comparison, Table 7 shows 878 of the 11,805 births occurring in South Dakota during 2004 were not to South Dakota residents.

Birth Weight

Low birth weight (LBW) is defined as live births with a weight less than 2,500 grams or five pounds eight ounces. The data in Table 8, page 14, indicates that in 2004 the majority of births fell into the 3,000 to 3,499 gram or 3,500 to 3,999 gram category. This is consistent with data from the past several years.

Table 7
Live Births Occurring in South Dakota by
Mother's Resident State and Race, 2004

	Total	RACE OF MOTHER		
		White	American Indian	Other
Total	11,805	9,448	2,039	315
Iowa	258	253	4	*
Minnesota	284	266	12	6
Montana	6	5	*	*
North Dakota	44	43	*	*
Nebraska	186	151	35	*
South Dakota	10,927	8,639	1,981	305
Wyoming	86	82	*	3
All Other	14	9	4	*

Note: *Cells with less than 3 events.

Failure of the races to add to the total is due to unknown races contained in the total birth column

Source: South Dakota Department of Health, Office of Data, Statistics, and Vital Records.

Table 8
South Dakota Resident Live Births by Birth Weight and Mother's Race,
2004

Birth Weight (in Grams)	Total		Race of Mother					
			White		American Indian		Other	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
0-499	15	0.1	10	0.1	4	0.2	*	*
500-999	56	0.5	40	0.4	13	0.6	3	1.0
1,000-1,499	68	0.6	45	0.5	23	1.1	*	*
1,500-1,999	148	1.3	113	1.3	32	1.5	3	1.0
2,000-2,499	500	4.4	387	4.3	97	4.6	16	5.1
2,500-2,999	1,794	15.8	1,407	15.8	332	15.8	55	17.6
3,000-3,499	4,219	37.2	3,353	37.6	720	34.3	144	46.0
3,500-3,999	3,394	29.9	2,713	30.4	612	29.1	69	22.0
4,000-4,499	987	8.7	756	8.5	214	10.2	17	5.4
4,500-4,999	138	1.2	91	1.0	44	2.1	3	1.0
5,000 & Over	15	0.1	8	0.1	6	0.3	*	*
Total	11,339	100.0	8,924	100.0	2,100	100.0	313	100.0
Median	3,374		3,374		3,402		3,260	
Mean	3,337		3,338		3,348		3,244	
Mode	3,402		3,260		3,289		3,345	

Note: Failure of the races and birth weights to add to the total is due to unknown races and birth weights contained in the total birth column and row.

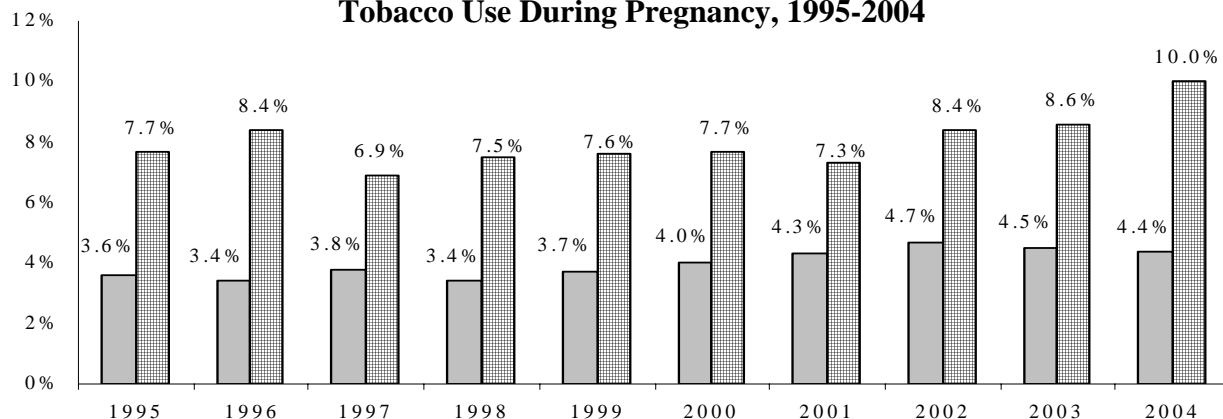
*Cells with less than 3 events.

Source: South Dakota Department of Health, Office of Data, Statistics, and Vital Records

In 2004, there were 787 low weight births or 6.9 percent of all South Dakota resident live births. When looking at race, 6.7 percent of white babies and 8.0 percent of American Indian babies were low birth weight in 2004. In comparison, in 2003 white and American Indian low birth weight births were 6.5 and 7.0 percent, respectively.

Use of tobacco during pregnancy is associated with low birth weight, miscarriages, and infant mortality¹. For example, Figure 3 below illustrates that tobacco use during pregnancy was reported on 18.7 percent of the 2004 South Dakota resident birth certificates of which 10 percent had a baby under 2,500 grams. Of those reporting no maternal tobacco use in 2004, 4.4 percent had a low birth weight baby.

Figure 3
Single, Live, Low Weight Births to South Dakota Residents by Mother's
Tobacco Use During Pregnancy, 1995-2004



Source: South Dakota Department of Health, Office of Data, Statistics, and Vital Records

■ No Tobacco Use ▨ Did Use Tobacco

In 2004, 69.3 percent of low birth weight infants in South Dakota were born preterm. Preterm birth is among the leading causes of infant death¹.

Table 9, below, displays preterm and full term – low birth weight births to South Dakota residents by mother’s age.

Table 9
South Dakota Resident Preterm and Full Term Births Less Than 2,500 Grams by Mother’s Age, 2004

Mother’s Age	Weeks of Gestation							
	Total		Less than 32 Weeks		32 to 36 Weeks		37 and Above	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
< 18 Years	24	100.0	4	16.7	13	54.2	7	29.2
18-19 Years	67	100.0	21	31.3	19	28.4	27	40.3
20-24 Years	247	100.0	51	20.6	111	44.9	85	34.4
25-29 Years	225	100.0	49	21.8	116	51.6	60	26.7
30-34 Years	151	100.0	27	17.9	86	57.0	38	25.2
35 + Years	71	100.0	11	15.5	37	52.1	23	32.4
Total	785	100.0	163	20.8	382	48.7	240	30.6

Note: Failure to add up to 787 because of 2 unknown gestations.

Source: South Dakota Department of Health, Office of Data, Statistics, and Vital Records

Table 10, below, compares low birth weight to normal birth weight babies by selected behaviors of the mother. All babies compared in Table 10 are at least 37 weeks of gestation and no multiple births are included. Of the babies born at 37 weeks gestation and above who weighed less than 2,500 grams in 2004, 43.3 percent were born to mothers who smoked during their pregnancy. In comparison, 17.8 percent of normal birth weight babies were born to mothers who smoked in 2004.

13.7 percent of normal birth weight babies were born to mothers who had low weight gain during their pregnancy.

Of the babies born at 37 weeks gestation and above who weighed less than 2,500 grams in 2004, 69.5 percent were born to mothers who sought prenatal care in the first trimester. Similarly, 77.9 percent of normal birth weight babies were born to mothers who sought prenatal care in the first trimester in 2004.

Of the babies born at 37 weeks gestation and above who weighed less than 2,500 grams in 2004, 23.7 percent were born to mothers who had low weight gain during their pregnancy. In comparison in 2004,

When looking at the selected behaviors of mothers and whether their behaviors affected if they had a baby who weighed above or below 2,500 grams for the last 10 years, the results are similar to the findings in 2004.

Table 10
Selected Behaviors of the Mother by Infant’s Birth Weight, 2004 and 1995-2004

Behaviors	2004		1995-2004	
	Birth Weight (Grams)		Birth Weight (Grams)	
	<2500	2500+	<2500	2500+
Smokers	43.3%	17.8%	41.7%	19.6%
Low Weight Gain of Mother	23.7%	13.7%	21.4%	12.2%
First Trimester Prenatal Care	69.5%	77.9%	76.9%	80.3%

Note: Only infants who were at least 37 weeks gestation were included in this table.

Only mothers who gained less than 16 lbs are included in the low weight gain data.

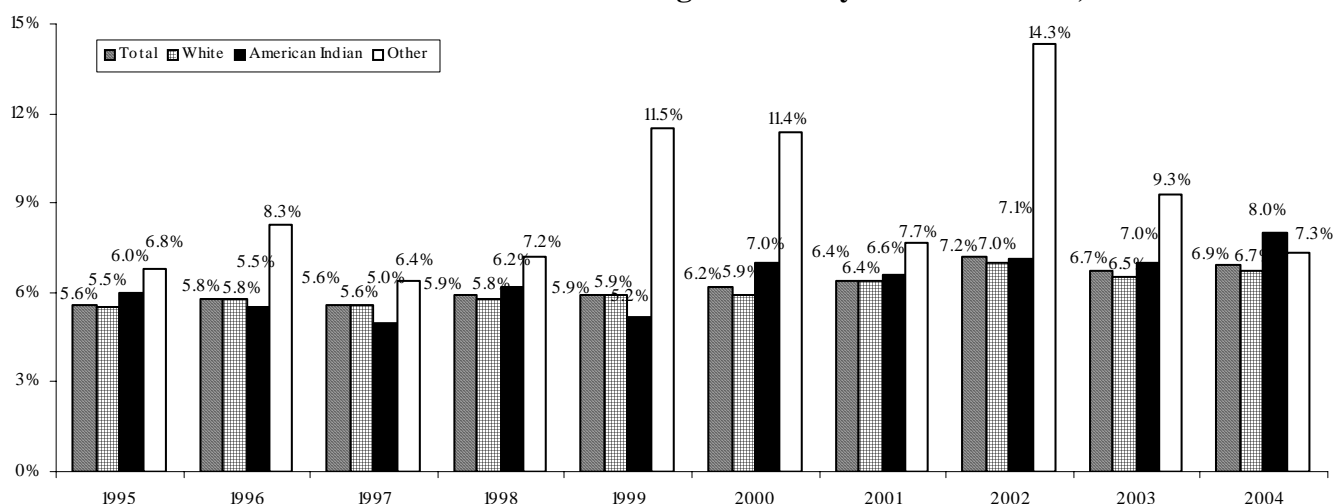
Multiple births are excluded.

Source: South Dakota Department of Health, Office of Data, Statistics, and Vital Records

Figure 4, below, compares the low birth weight babies by race of mother from 1995 to 2004. In 2004, white women accounted for 595 or 6.7 percent of low birth weight babies. American Indian women accounted for 169 or 8.0 percent of low birth weight

babies. In 2004, there was a 6.1 percent increase in white low birth weight babies while among American Indians there was a 15.8 percent increase in low birth weight babies.

Figure 4
South Dakota Resident Low Birth Weight Births by Race of Mother, 1995-2004



Note: Failure of the races to add to the total is due to unknown races contained in the total birth column.

Source: South Dakota Department of Health, Office of Data, Statistics, and Vital Records

Mother's Age and Race

Table 11, below, illustrates that women aged 25 to 29 accounted for the largest percentage of South Dakota resident births in 2004, at 30.4 percent. Women less than 20 years of age comprised 10 percent of the total resident births. White women less than 20 years of age accounted for 7.0 percent of the

total white births, while American Indian women of the same age constituted 22.2 percent of the total American Indian births. The median ages for white and American Indian mothers were 27 and 23 years of age, respectively. The modal ages were 27 and 21 years of age, respectively.

Table 11
South Dakota Resident Live Births by Mother's Age and Race, 2004

Age of Mother	Total		Race Of Mother					
			White		American Indian		Other	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Less than 18	311	2.7	142	1.6	159	7.6	10	3.2
18-19 Years	823	7.3	487	5.5	307	14.6	29	9.3
20-24 Years	3,198	28.2	2,322	26.0	790	37.6	85	27.2
25-29 Years	3,446	30.4	2,904	32.5	454	21.6	88	28.1
30-34 Years	2,399	21.2	2,081	23.3	258	12.3	60	19.2
35-39 Years	961	8.5	818	9.2	108	5.1	34	10.9
40 & over	201	1.8	170	1.9	24	1.1	7	2.2
Total	11,339	100.0	8,924	100.0	2,100	100.0	313	100.0

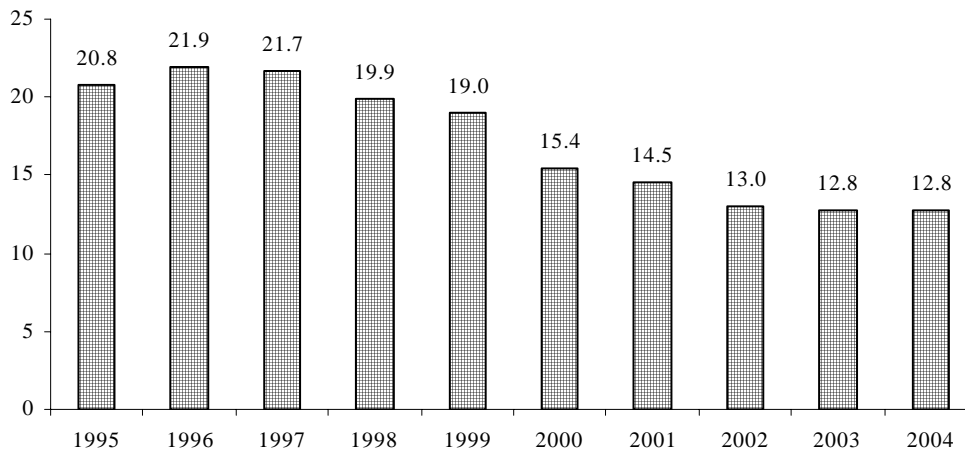
Note: Failure of the races to add to the total is due to unknown races contained in the total birth column.

Source: South Dakota Department of Health, Office of Data, Statistics, and Vital Records

Figure 5, below, illustrates South Dakota resident teen births (17 years old and younger) as a rate from 1995 through 2004. In 2004, the teen birth rate was 12.8. It

remained unchanged from 2003. Since 1996 there has been a decline in the number of teen births. A 41.6 percent decrease in the teen birth rate from 1996 to 2004.

Figure 5
South Dakota Resident Single Live Teen Birth Rates, 1995-2004



Note: Rates are per 1,000 female population ages 14-17.

Rates from 1995-1999 are based on the 1990 census. Rates from 2000-2004 are based on the 2000 census.

For purposes of calculating birth rates, multiple births (twins, triplets, etc.) are counted only as a single birth.

Source: South Dakota Department of Health, Office of Data, Statistics, and Vital Records

Prenatal Care

Table 12, below, shows the number and percentage of South Dakota resident single live births and when the mothers started prenatal care in 2004. Over 77 percent of mothers initiated care in the first trimester,

82.6 percent of white mothers and 57.1 percent of American Indian. Less than one percent did not obtain prenatal care at all, 0.5 percent of white mothers and 2.6 percent of American Indian mothers.

Table 12
South Dakota Resident Single Live Births by Trimester Prenatal Care Began and Mother's Race, 2004

Trimester Prenatal Care Began	Total		Race of Mother					
			White		American Indian		Other	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
First	8,635	77.5	7,237	82.6	1,180	57.1	217	70.0
Second	2,021	18.1	1,319	15.1	622	30.1	79	25.5
Third	351	3.1	141	1.6	201	9.7	9	2.9
None	101	0.9	42	0.5	54	2.6	5	1.6
Unknown	35	0.3	24	0.3	11	0.5	*	*
Total	11,143	100.0	8,763	100.0	2,068	100.0	310	100.0

Note: Failure of the races to add to the total is due to the unknown races contained in the total birth column.

For purposes of calculating prenatal care multiple births (twins, triplets, etc) are counted only as a single birth.

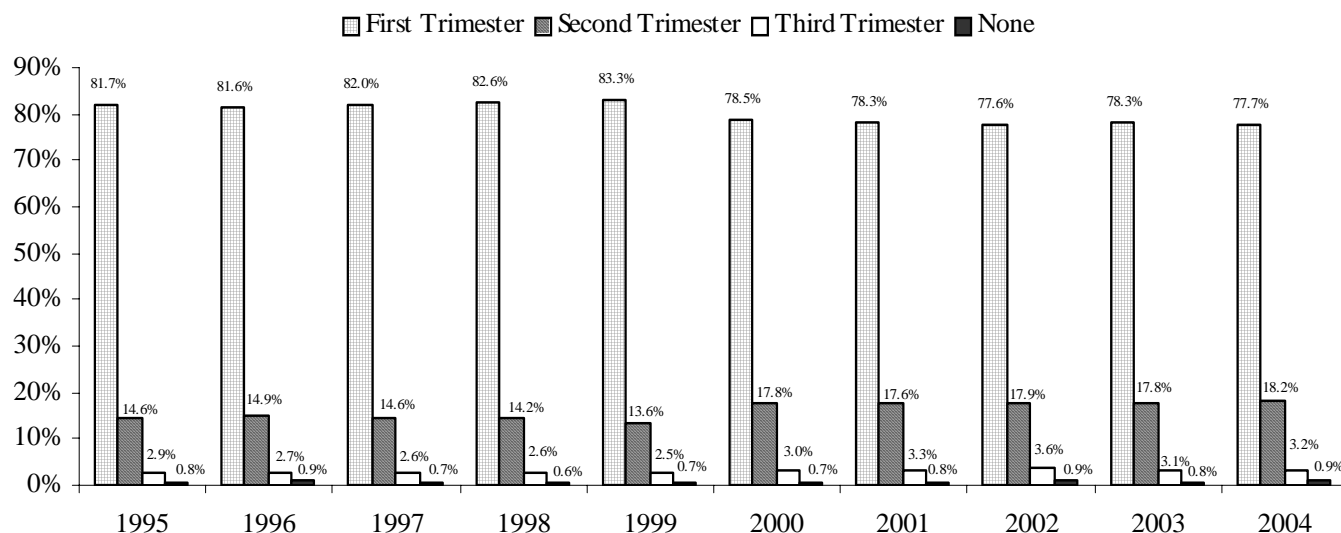
*Cells with less than 3 events.

Source: South Dakota Department of Health, Office of Data, Statistics, and Vital Records

Figure 6, below, shows the 10 year trend for South Dakota resident single live births and when the mothers started prenatal care. The number of women who began prenatal care in the first trimester has been changing over the last 10 years, with the highest number of women seeking care in their first trimester in

1999 with 83.3 percent and the lowest number of women seeking care in their first trimester in 2002 with 77.6 percent. In 2004, 77.7 percent of the women sought prenatal care in the first trimester, while in 2003, 78.3 percent of the women sought care in the first trimester. This is a .8 percent decrease.

Figure 6
South Dakota Resident Single Live Births by Trimester
Prenatal Care Began, 1995-2004



Note: For purposes of calculating prenatal care, multiple births (twins, triplets, etc) are counted only as a single birth.
Source: South Dakota Department of Health, Office of Data, Statistics, and Vital Records

Table 13, below, indicates that 14.1 percent of the pregnancies resulting in low birth weight babies (less than 2,500 grams) had less than five prenatal care visits; 40.3

percent of the American Indian and 6.3 percent of the white low birth weight babies were born to mothers with fewer than five prenatal care visits.

Table 13
South Dakota Resident Single Live Births by Number of Prenatal Visits
and Mother's Race for Low Birth Weight Babies, 2004

Number of Prenatal Care Visits	Total		Race of Mother					
			White		American Indian		Other	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
None	25	3.6	7	1.4	18	11.7	*	*
1-4	72	10.5	25	4.9	44	28.6	3	13.6
5-9	293	42.7	229	44.9	58	37.7	6	27.3
10-14	231	33.7	194	38.0	28	18.2	9	40.9
15-19	51	7.4	45	8.8	3	1.9	3	13.6
20+	9	1.3	6	1.2	*	*	*	*
Not Stated	5	0.7	4	0.8	*	*	*	*
Total	686	100.0	510	100.0	154	100.0	22	100.0

Note: For purposes of calculating prenatal care, multiple births (twins, triplets, etc) are counted only as a single birth.
*Cells with less than 3 events.

Source: South Dakota Department of Health, Office of Data, Statistics, and Vital Records

Congenital Anomalies

Congenital anomalies reported from 1995 to 2004 are shown in Table 14 below. Since 1989, South Dakota birth certificates have contained check boxes to report some of the most severe congenital anomalies. The total number of infants with at least one anomaly in the period from 1989-2004 was 3,187 with a total of 3,743 congenital anomalies being reported. From 1995 to 2004 there were 1,774 or a rate of 16.8 infants with at

least one congenital anomaly. In 2004, there were 179 infants with at least one congenital anomaly which accounted for less than two percent of total births.

The most frequently reported anomaly since 1989 was other musculoskeletal/integumental anomalies, which continues to be the most frequent for the ten year total.

Table 14
South Dakota Resident Births with Reported Congenital Anomalies,
by Baby's Gender, 1995-2004

	Total		Baby's Gender			
			Female		Male	
	Number	Rate	Number	Rate	Number	Rate
Number of infants with at least one anomaly	1,774	16.8	723	14.0	1,051	19.5
Total Congenital Anomalies	2,080	19.7	846	16.3	1,234	22.9
Other Musculoskeletal/Integumental Anomalies	360	3.4	185	3.6	175	3.2
Other Urogenital Anomalies	248	2.3	34	0.7	214	4.0
Heart Malformations	203	1.9	93	2.0	110	2.0
Cleft Lip/Palate	163	1.5	68	1.3	95	1.8
Malformed Genitalia	118	1.1	9	0.2	109	2.0
Other Circulatory Anomalies	115	1.1	44	0.8	71	1.3
Polydactyly/Syndactyly/Adactyly	109	1.0	51	1.0	58	1.1
Club Foot	104	1.0	34	0.7	70	1.3
Down's Syndrome	95	0.9	52	1.0	43	0.8
Other Gastrointestinal Anomalies	66	0.6	29	0.6	37	0.7
Omphalocele/Gastroschisis	63	0.6	40	0.8	23	0.4
Other Chromosomal Anomalies	44	0.4	24	0.5	20	0.4
Other Central Nervous System Anomalies	41	0.4	20	0.4	21	0.4
Hydrocephalus	40	0.4	21	0.4	19	0.3
Diaphragmatic Hernia	34	0.3	14	0.3	20	0.4
Spina Bifida/Meningocele	27	0.3	15	0.3	12	0.2
Renal Agenesis	25	0.2	4	0.1	21	0.4
Tracheo-esophageal Fistula/Esophageal Atresia	18	0.2	11	0.2	7	0.1
Microcephalus	16	0.2	11	0.2	5	0.1
Anencephalus	12	0.1	7	0.1	5	0.1
Other	179	1.7	83	1.6	99	1.8

Note: Rates are per 1,000 live births from 1995-2004.

Source: South Dakota Department of Health, Office of Data, Statistics, and Vital Records

Table 15, below, shows congenital anomalies reported over the last 10 years. The total number of infants with at least one anomaly from 1995 to 2004 is 1,774. There was also a 7.7 percent decrease in the

number of infants with at least one anomaly from 2003 to 2004. From 1995 to 2004 there was a 5.3 percent decrease in the number of infants with at least one anomaly.

Table 15
South Dakota Resident Births with Reported Congenital Anomalies, 1995-2004

	Total	Year of Birth									
		2004	2003	2002	2001	2000	1999	1998	1997	1996	1995
Total Births	105,784	11,339	11,022	10,698	10,475	10,346	10,516	10,281	10,168	10,469	10,470
Number of infants with at least one anomaly	1,774	179	194	189	168	151	176	170	176	182	189
Percent of infants with at least one anomaly	1.7%	1.6%	1.8%	1.8%	1.6%	1.5%	1.7%	1.7%	1.7%	1.7%	1.8%
Other Musculoskeletal/Integumental Anomalies	360	27	36	26	27	35	50	41	45	49	24
Other Urogenital Anomalies	248	12	25	20	12	21	25	27	32	34	40
Heart Malformations	203	38	29	21	17	17	12	17	16	16	20
Cleft Lip/Palate	163	13	22	14	22	17	20	15	17	11	12
Malformed Genitalia	118	13	18	21	23	13	5	3	5	8	9
Other Circulatory Anomalies	115	10	10	11	10	6	8	10	25	13	12
Polydactyly/Syndactyly/Adactyly	109	4	12	13	8	13	16	8	13	13	9
Club Foot	104	13	14	14	13	7	8	8	8	6	13
Down's Syndrome	95	17	12	12	10	6	11	10	7	7	3
Other Gastrointestinal Anomalies	66	11	6	6	6	7	10	6	4	5	5
Omphalocele/Gastroschisis	63	9	5	7	9	10	*	6	5	7	3
Other Chromosomal Anomalies	44	4	5	7	3	3	4	5	*	4	7
Other Central Nervous System Anomalies	41	4	8	4	5	3	*	4	4	*	5
Hydrocephalus	40	5	4	5	6	7	5	3	*	*	3
Diaphragmatic Hernia	34	3	*	7	4	*	4	*	5	5	*
Spina Bifida/Meningocele	27	3	3	3	3	*	*	3	3	4	3
Renal Agenesis	25	*	3	4	*	*	4	*	4	*	*
Tracheoesophageal Fistula/Esophageal Atresia	18	*	3	3	*	*	4	*	*	*	*
Microcephalus	16	*	*	*	*	4	*	3	*	*	*
Anencephalus	12	*	*	3	*	*	4	*	*	*	*
Rectal Astresia/Stenosis	10	*	*	3	*	*	*	*	*	*	*
Other	169	25	5	5	3	*	12	29	12	30	46

Note: *Cells with less than 3 events.

Source: South Dakota Department of Health, Office of Data, Statistics, and Vital Records

Medical History Factors

Table 16, below, lists the medical history factors that were reported on birth certificates for South Dakota resident mothers from 1995 to 2004. During 2004, these medical history factors were associated with 22.8 percent of pregnancies resulting in live births. These medical factors can increase the morbidity and

mortality risks of both the mother and infant, particularly when they are not adequately treated¹. For example, pregnancy-associated hypertension, the factor most frequently reported on 2004 South Dakota birth certificates, is one of the most frequent causes of maternal death in the United States¹.

Table 16
South Dakota Resident Single Live Births by
Mother's Medical History Factors for this Pregnancy, 1995-2004

	Total	Year of Birth									
		2004	2003	2002	2001	2000	1999	1998	1997	1996	1995
Total births	104,200	11,143	10,864	10,521	10,295	10,204	10,365	10,122	10,046	10,307	10,333
Hypertension, pregnancy-associated	5,079	657	565	555	533	584	578	421	393	425	368
Diabetes, gestational	2,634	336	313	314	288	260	282	236	219	213	173
Hydramnios/Oligohydramnios	2,404	280	266	277	261	244	250	238	222	208	158
Previous infant 4000+ grams	2,211	256	257	214	175	189	212	191	259	238	220
Pervious preterm or small-for-gestational-age infant	1,763	204	208	185	141	171	156	159	188	182	169
Anemia (Hct. <30/Hgb. <10)	1,653	221	185	180	164	188	181	141	111	147	135
Hypertension, chronic	776	94	107	99	78	63	82	67	59	65	62
Uterine bleeding	724	49	58	53	55	59	83	93	87	109	78
Diabetes, pre-existing	604	75	68	80	67	63	62	62	45	33	49
Genital herpes	486	53	52	46	49	64	53	38	50	32	49
Acute or chronic lung disease	462	51	63	70	45	68	60	48	25	21	11
Incompetent cervix	384	39	33	45	41	41	47	31	35	35	37
Eclampsia	325	29	13	11	23	29	43	47	46	40	44
Blood group sensitization	274	38	17	24	21	12	40	25	33	31	33
Cardiac disease	246	30	37	27	40	30	30	15	11	14	12
Renal disease	241	15	26	21	31	33	45	19	15	21	15
Hemoglobinopathy	23	5	*	4	*	*	*	*	*	*	5
Other	8,875	522	612	633	950	927	837	1,092	1,025	1,172	1,105
None	79,247	8,597	8,403	8,103	7,756	7,605	7,811	7,641	7,652	7,737	7,942

Note: For purposes of reporting medical history factors of the mother, multiple births (twins, triplets, etc.) are counted only as a single birth.

*Cells with less than 3 events.

Source: South Dakota Department of Health, Office of Data, Statistics, and Vital Records

Complications of Labor and/or Delivery

Table 17, below, lists the complications of labor and/or delivery from 1995 to 2004 reported on South Dakota resident birth certificates. The four most prevalent complications per 1,000 live births in 2004 were fetal distress (73.6 per 1,000),

meconium, moderate/heavy (53.5 per 1,000), breech/malpresentation (46.6 per 1,000) and dysfunctional labor (45.7 per 1,000). Overall, complications of labor and/or delivery were present in 28.6 percent of resident births in 2004.

Table 17
South Dakota Births by Complications of Labor and/or Delivery, 1995-2004

	Total	Year of Birth									
		2004	2003	2002	2001	2000	1999	1998	1997	1996	1995
Total Births	105,784	11,339	11,022	10,698	10,475	10,346	10,516	10,281	10,168	10,469	10,470
Fetal distress	6,106	834	672	711	682	664	572	464	429	532	546
Dysfunctional labor	5,193	518	563	543	509	602	534	392	499	510	523
Breech/Malpresentation	5,101	528	532	543	532	491	517	439	478	530	511
Meconium, moderate/heavy	4,760	607	567	566	550	549	429	354	331	392	415
Cephalopelvic disproportion	3,020	283	247	272	231	310	304	340	317	340	376
Premature rupture of membrane (>12 hours)	2,719	278	280	268	240	264	259	240	252	296	342
Precipitous labor (<3 hours)	2,087	255	245	253	207	175	162	208	181	176	225
Prolonged (>20 hours)	1,377	125	122	113	136	126	143	134	153	164	161
Febrile (>100°F. or 38°C.)	883	96	95	79	110	84	101	75	62	90	91
Other excessive bleeding	820	113	98	98	66	54	65	83	71	88	84
Abruptio placenta	759	100	74	72	66	77	83	65	78	66	78
Placenta previa	291	36	34	33	26	38	30	33	35	14	12
Cord prolapse	190	22	20	24	13	18	25	17	14	15	22
Anesthetic complications	51	7	6	4	4	6	4	4	6	3	7
Seizures during labor	36	5	3	*	*	3	3	6	4	4	5
Other	4,166	95	96	139	164	144	356	707	714	891	860
None	75,303	8,092	8,034	7,661	7,536	7,375	7,573	7,412	7,298	7,243	7,709

Note: Cells with less than 3 events.

Source: South Dakota Department of Health, Office of Data, Statistics, and Vital Records

Methods of Delivery

Table 18, below, shows the last 10 years of births by method of delivery. In 2004, vaginal births accounted for 72 percent of the South Dakota resident births, which is a decrease of 0.3 percent from 72.2 percent in 2003. In 2004, primary C-section accounted for 14.6 percent of the South Dakota

resident births. The percent of primary C-section for South Dakota residents remained unchanged from 2003 to 2004. C-section, (primary + repeat) accounted for 26 percent of the 2004 South Dakota resident births, which is an increase of 0.4 percent from 25.9 percent in 2003.

Table 18
South Dakota Resident Live Births by Method of Delivery, 1995-2004

	Total	Year of Birth									
		2004	2003	2002	2001	2000	1999	1998	1997	1996	1995
Total Births	105,784	11,339	11,022	10,698	10,475	10,346	10,516	10,281	10,168	10,469	10,470
Vaginal	79,065	8,167	7,962	7,795	7,798	7,721	7,877	7,793	7,872	8,034	8,046
Primary C-section	14,079	1,653	1,612	1,537	1,391	1,414	1,382	1,296	1,207	1,359	1,228
Repeat C-section	10,115	1,300	1,242	1,144	1,046	957	968	933	830	829	866
Vaginal birth after previous C-section	2,464	219	206	222	240	253	289	258	259	245	273
Vacuum	7,914	891	843	765	785	746	751	906	819	779	629
Forceps	2,956	226	251	271	240	238	304	325	367	370	364

Source: South Dakota Department of Health, Office of Data, Statistics, and Vital Records

Apgar score

The Apgar score was developed by the late Virginia Apgar, M.D., as a standardized mechanism to assess the physical condition of newborns. The score considers five easily identifiable characteristics – heart rate, respiratory effort, muscle tone, reflex, and color. Each characteristic is assessed and assigned a value from zero to two, with two being optimum. If the total score of these five components is seven or greater, a newborn is considered to be in good to excellent physical condition. As a method to predict a baby's chances of survival, the Apgar score is assessed at one and five minutes after delivery with the five-minute score regarded as the better measure to make predictions¹.

In 2004, 1.4 percent of South Dakota resident infants received five-minute Apgar scores less than seven. Considering race,

1.3 percent of white infants and 1.6 percent of American Indian infants received a five-minute Apgar score less than seven in 2004.

Obstetric Procedures

Table 19, on the next page, shows obstetric procedures used for the last 10 years. It lists the two most prevalent obstetric procedures in 2004 as electronic fetal monitoring (EFM) and ultrasound. EFM was reported for 86.4 percent of resident mothers while ultrasound was reported for 65.5 percent of resident mothers in 2004. Racially, EFM usage was 85.6 percent for white mothers and 90.7 percent for American Indian mothers. Likewise, ultrasound usage was reported for 67.9 percent of white mothers and 56.5 percent of American Indian mothers on 2004 birth certificates. Overall, obstetric procedures were reported for 95.5 percent of resident mothers in 2004.

Table 19
South Dakota Resident Single Live Births by Obstetric Procedures, 1995-2004

	Total	Year of Birth									
		2004	2003	2002	2001	2000	1999	1998	1997	1996	1995
Total Births	104,200	11,143	10,864	10,521	10,295	10,204	10,365	10,122	10,046	10,307	10,333
Electronic fetal monitoring	85,793	9,631	9,498	9,092	8,814	8,697	8,840	8,459	7,623	7,734	7,405
Ultrasound	69,829	7,304	7,215	6,967	7,055	7,058	6,969	6,851	6,650	6,979	6,781
Induction of labor	22,331	2,885	2,861	2,755	2,534	2,318	2,182	1,827	1,821	1,650	1,498
Stimulation of labor	14,806	1,636	1,582	1,666	1,651	1,450	1,500	1,386	1,280	1,360	1,295
Tocolysis	2,179	228	173	224	219	211	246	205	211	221	241
Amniocentesis	1,932	176	210	179	189	211	243	173	158	202	191
Other	1,050	23	25	23	10	32	113	164	200	245	215
None	5,946	507	447	440	524	710	610	595	629	683	801

Note: For purposes of reporting obstetric procedures of the mother, multiple births (twins, triplets, etc.) are counted only as a single birth.

Source: South Dakota Department of Health, Office of Data, Statistics, and Vital Records

Abnormal Conditions of the Newborn

Table 20, below, shows the last 10 years of abnormal conditions in newborns. In 2004, 3.2 percent of South Dakota resident live birth certificates reported abnormal conditions of the newborn. Racially, abnormal conditions were reported for 3.2

percent of white infants while they were reported for 3.7 percent of American Indian infants. Overall, assisted ventilation greater than 30 minutes was the most prevalent condition reported in 2004.

Table 20
South Dakota Resident Live Births by Abnormal Conditions of the Newborn 1995-2004

	Total	Year of Birth									
		2004	2003	2002	2001	2000	1999	1998	1997	1996	1995
Total Births	105,784	11,339	11,022	10,698	10,475	10,346	10,516	10,281	10,168	10,469	10,470
Assisted ventilation >30 min.	1,129	141	153	156	93	108	116	108	87	91	76
Assisted ventilation <30 min.	1,120	80	31	30	45	57	65	128	123	195	366
Hyaline membrane disease/RDS	732	85	91	121	106	76	64	47	45	52	45
Birth injury	252	21	22	37	19	28	28	19	32	26	20
Meconium aspiration syndrome	217	14	28	31	19	18	21	18	18	26	24
Anemia (Hct. <39/Hgb. <13)	154	16	13	18	7	6	15	15	16	14	34
Other	2,494	72	65	100	117	141	242	367	463	467	460
None	100,472	10,974	10,701	10,296	10,133	9,970	10,039	9,667	9,487	9,701	9,504

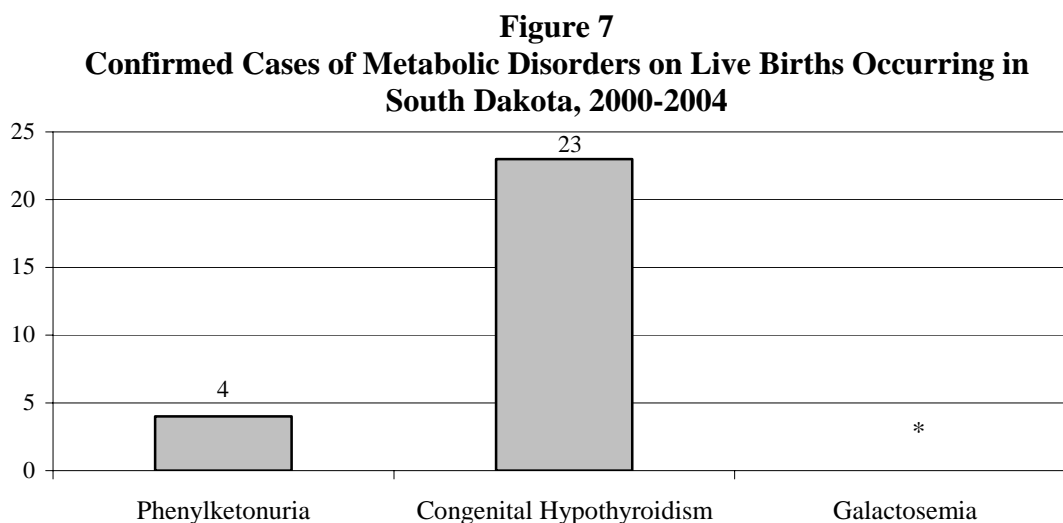
Note: Abnormal conditions do not equal the total number of resident births due to multiple conditions listed on some birth certificates.

Source: South Dakota Department of Health, Office of Data, Statistics, and Vital Records

Confirmed Cases of Metabolic Disorders

Figure 7, below, shows cases of confirmed metabolic disorders for phenylketonuria, congenital hypothyroidism, and galactosemia for the past five years.

Congenital hypothyroidism had the highest number of newborns diagnosed with 23 cases from 2000 to 2004.



Note: *Cells with less than 3 events.

Source: South Dakota Department of Health, Office of Family Health

Newborn Hearing Screening

Table 21, below, displays newborn hearing screening. The hearing program started in 2001 and is voluntary participation by all birthing facilities in the state. The goal of the program is to have all newborns screened for hearing impairment by one month of age, receive an evaluation for a diagnostic audiologist by three months of age, and receive intervention by six months. Overall, 92.1 percent of newborns received

screening by the time they were one month old, while 6.3 percent of newborns never received screening. When looking at prior to discharge, 88 percent of newborns were screened and 87 percent of newborns were screened by the time they were one month old. When looking at after discharge, 5.7 percent of newborns were screened and 5.2 percent of newborns were screened by the time they were one month old.

Table 21
Births Occurring in South Dakota by Hearing Test Status, 2004

		Number	Percent
Total Births	Total	11,805	100.0
	Screened by 1 month	10,876	92.1
	Screened after 1 month	187	1.6
	Not Screened	742	6.3
Prior to Discharge	Total	10,385	88.0
	Screened by 1 month	10,268	87.0
	Screened after 1 month	117	1.0
After Discharge	Total	678	5.7
	Screened by 1 month	608	5.2
	Screened after 1 month	70	0.6

Source: South Dakota Department of Health, Office of Data, Statistics, and Vital Records

